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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,302	07/27/2001	Shigehisa Motowaki	503.40396X00	8936
7590	03/02/2004		EXAMINER	
Antonelli Terry Stout & Kraus Suite 1800 1300 North Seventeenth Street Arlington, VA 22209			NINO, ADOLFO	
			ART UNIT	PAPER NUMBER
			2831	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

K.D.

Office Action Summary

Application No.

09/890,302

Applicant(s)

MOTOWAKI ET AL.

Examiner

Adolfo Nino

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 and 3 is/are allowed.
- 6) ☒ Claim(s) 4-13 is/are rejected.
- 7) ☒ Claim(s) 1 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Election/Restrictions

Applicant's election with traverse of species V based on figure 1 with claim 7 in Paper filed 11/10/03 is acknowledged. The traversal is on the ground(s) that claim 7 is directed to the configuration of the sealing glass as illustrated in such figure, which configuration is found in other figures of the drawings considered to be separate species by the Examiner. This is found to be persuasive; hence, withdrawal of the election requirement is made with respect to all the claims in this application.

Claim Objections

Claim 1 is objected to because of the following informalities:

Claim 1, line 6, "a sealing" should be ---said sealing--- in order to be clear that it is referring to the sealing mentioned in line 3 of same claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Sherk (US 4,071,287). Sherk discloses a manufacturing method for a gas discharge type display

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panel in which a couple of substrates (11, 13) are arranged to be facing to each other (fig. 1), a surrounding area of said substrate is sealed by a sealing glass (31), and an inside space is used as a discharge space by sealing a discharge gas in an internal space, wherein a gas unnecessary for an discharge operation is exhausted from said inside space if a state of said amorphous sealing glass is located in a temperature range exceeding its softening point and no more than its working point (col. 1, lines 44-67).

Claims 5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagano et al. (US 5,207,607).

Regarding claim 5, Nagano et al. disclose a manufacturing method for a gas discharge type display panel (figs. 17, 18) in which a couple of substrates (1, 3) are arranged to be facing to each other (figs. 17, 18), a surrounding area of said substrate is sealed by a sealing glass (6), and an inside space is used as a discharge space by sealing a discharge gas in an internal space, wherein said couple of substrates (1, 3) are sealed at least doubly by sealing glasses (6, 27, 28) each having an individual softening point different from each other (col. 5, lines 3-4, 24-26; and col. 6, lines 51-54).

Regarding claim 9, Nagano et al. disclose a manufacturing method for a gas discharge type display panel in which a couple of substrates (1, 3 in figs. 17, 18) are arranged to be facing to each other (figs. 17, 18), a surrounding area of said substrate is

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sealed by a sealing glass (6), and an inside space is used as a discharge space by sealing a discharge gas in an internal space, wherein a glass layer (27, 28) having a heat resistance higher than said sealing glass (col. 5, lines 3-4, 24-26; and col. 6, lines 51-54) is formed so as to be adjacent to an inside space end part of said sealing glass (figs. 17, 18) or within 2 mm from an end part.

Claim 7 (Once Amended) is rejected under 35 U.S.C. 102(b) as being anticipated by Tang (US 5,007,872). Tang discloses a manufacturing method for a gas discharge type display panel in which a couple of substrates (200, 203 in fig. 2) are arranged to be facing to each other (fig. 2), a surrounding area of said substrate is sealed by a sealing glass (225), and an inside space is used as a discharge space by sealing a discharge gas in an internal space, wherein at least at one portion of a surrounding area of said substrate, a cross-section of said sealing glass (225) viewed vertically to a substrate is shaped so as to be convex with respect to an inside space at both its inside space end part and its outside end part (fig. 2).

Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Otsuka et al. (JP 53141572 A). Otsuka et al. disclose a manufacturing method for a gas discharge type display panel in which a couple of substrates (12, 13 in fig. 5) are arranged to be facing to each other (fig. 5), a surrounding area of said substrate is sealed by a sealing

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glass (16, 17 in fig. 5), and an inside space is used as a discharge space by sealing a discharge gas in an internal space, wherein at least at one portion of a surrounding area of said substrate, a concentration of filler at an inside space end part of said sealing glass is larger than that in other portions (fig. 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tang (US 5,007,872). Tang discloses a manufacturing method for a gas discharge type display

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panel in which a couple of substrates (200, 203 in fig. 2) are arranged to be facing to each other (fig. 2), a surrounding area of said substrate is sealed by a sealing glass (225), and an inside space is used as a discharge space by sealing a discharge gas in an internal space, wherein a protruding portion having a curvature radius is formed on an overall periphery of said sealing glass at its inside space, **except for** said curvature radius being between 0.1 mm and 1mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have said curvature radius of Tang be between 0.1 mm and 1mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claim 10 (New) is rejected under 35 U.S.C. 103(a) as being obvious over Tang (US 5,007,872) in view of Sherk (US 4,071,287). Tang discloses a manufacturing method according to claim 7, **except for** a gas unnecessary for a discharge operation being exhausted from said inside space if a state of said sealing glass is located in a temperature range exceeding its softening point and no more than its working point. Sherk teaches that it is known to, wherein a gas unnecessary for a discharge operation, is exhausted from an inside space if a state of a sealing glass is located in a temperature range exceeding its softening point and no more than its working point as set forth at column 1, lines 44-67. It would have been obvious to one having ordinary skill in the art at the time the invention was made to exhaust from the inside space of

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Tang the unnecessary gas for a discharge operation if a state of said sealing glass is located in a temperature range exceeding its softening point and no more than its working point as taught by Sherk in order to have a more controlling step.

Claim 11 (New) is rejected under 35 U.S.C. 103(a) as being unpatentable over Tang (US 5,007,872) in view of Otsuka et al. (JP 53141572 A). Tang discloses a manufacturing method according to claim 7, **except for** at least at one portion of a surrounding area of said substrate, a concentration filler at an inside space end part of said sealing glass being larger than that in other portions. Otsuka et al. teach that it is known to have at least at one portion of a surrounding area of a substrate, a concentration filler at an inside space end part of a sealing glass being larger than that in other portions as set forth at fig. 5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have at least at one portion of a surrounding area of the substrate of Tang, a concentration filler at an inside space end part of said sealing glass being larger than that in other portions as taught by Otsuka et al. in order to obtain a ~~X~~ variant sealing.

PR 2/23/04

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang (US 5,007,872) in view of Nagano et al. (US 5,207,607).

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Regarding claim 12 (new), Tang discloses a manufacturing method according to claim 7, **except for** a glass layer having a heat resistance higher than said sealing glass is formed so as to be adjacent to an inside space and part of said sealing glass or within 2 mm from an end part. Nagano et al. teach that it is known to have a glass layer having a heat resistance higher than a sealing glass being formed so as to be adjacent to an inside space and part of said sealing glass or within 2 mm from an end part as set forth at column 5, lines 3-4 and 24-26 and column 6, lines 51-54. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a glass layer having a heat resistance higher than said sealing glass of Tang being formed so as to be adjacent to an inside space and part of said sealing glass or within 2 mm from an end part, as taught by Nagano et al. in order to have a more secure sealing.

Regarding claim 13 (new), Tang discloses a manufacturing method according to claim 7, **except for** another sealing glass being provided so that said couple of substrates are sealed at least doubly by said sealing glass and said another sealing glass, each having an individual softening point different from each other. Nagano et al. teach that it is known to have another sealing glass being provided so that said couple of substrates are sealed at least doubly by said sealing glass and said another sealing glass, each having an individual softening point different from each other as set forth at column 5, lines 3-4 and 24-26 and column 6, lines 51-54. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have another sealing glass being provided in Tang so that said couple of substrates are sealed at

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least doubly by said sealing glass and said another sealing glass, each having an individual softening point different from each other, as taught by Nagano et al. in order to have a more secure sealing.

Allowable Subject Matter

Claim 1 would be allowable if rewritten to overcome the objection(s) set forth in this Office action.

Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: With respect to claims 1-3, the cited prior art does not suggest, disclose nor teach, alone or in combination, the limitation therein of "wherein by exhausting said inside space when sealing, a sealing glass is made broken down and a clearance gap between said substrates is controlled" in combination with the other claim limitations.

With respect to claim 14, the cited prior art does not suggest, disclose nor teach, alone or in combination, the limitation therein of "wherein by exhausting said inside space when sealing, said sealing glass is made broken down and a clearance gap between said substrates is controlled" in combination with the other claim limitations.

Conclusion

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim (US 6,006,003) discloses an apparatus for sealing substrates. Costa et al. (US 3,858,284) disclose a method of spacing. Cho et al. (US 6,109,994) disclose a seal structure. Haberland et al. (US 3,837,724) disclose a gas panel fabrication. Kim et al. (US 6,603,260 B1) disclose a PDP. Foster et al. (US 3,849,190) disclose a dielectric glass. Aboelfotoh (US 4,475,060) discloses a stabilized PDD. Lee (US 6,287,995 B1) discloses a composition of sealing glass. Kanagu et al. (US 6,538,380 B1) disclose a PDP. Watkins (US 5,807,154) discloses a process for aligning FEDs. Peng (US 5,797,780) discloses a hybrid tubeless sealing process. Baret (US 6,537,121 B1) discloses a process for manufacturing PDP. Stern (US 3,701,368) discloses the fabrication of liquid crystal devices. Otsuka et al. (JP 56038734 A) disclose a stable composition of gas.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adolfo Nino whose telephone number is (571) 272-1981. The examiner can normally be reached on M-F (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A Reichard can be reached on (571) 272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AN


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